

Applicant(s): Myeong-cheol Kim, et al.
U.S. Serial No.: 09/731,385

REMARKS

Claims 1-8, 10 and 15 are rejected under 35 U.S.C. §102(b) as being anticipated by Chang et al. (U.S. Patent 5,817,562). Claims 9 and 11 are rejected under 35 U.S.C. §103(a) as being unpatentable over Chang et al. Claim 14 is rejected under 35 U.S.C. §103(a) as being unpatentable over Chang et al. in view of Huang (U.S. Patent 5,899,722). In view of the amendments to the claims in the following remarks, the rejections are respectfully traversed, and reconsideration of the rejections is requested.

The claims have been amended to clarify the distinctions between the applicants' claimed first insulation layer, which fills gaps between adjacent conductive patterns, and the oxide layer 24 of Chang et al., which covers a side of a polysilicon layer 16 and a gate oxide layer 14 as well as source/drain regions 22. The Chang et al. layer 24 is a conformal layer which coats these three elements of the Chang et al. device. In contrast, the applicants' first insulation layer fills gaps between adjacent conductive patterns.

The language added to the claims distinguishes the applicants' first insulation layer from the oxide layer 24 of Chang et al. by specifying that the applicants claimed first insulation layer has a planar top surface extending between adjacent conductive patterns and between the second conductive layer and the conductive patterns. This is in contrast to the oxide layer of Chang et al., which conforms to the sides of layers 16 and 14 and the top of source/drain regions 22. Because the Chang et al. layer 24 conforms to the approximate right-angle shape on the Chang et al. layers 16, 14 and 22, it does not have a planar top surface extending between adjacent conductive patterns or between a second conductive layer and conductive patterns. Accordingly, Chang et al. neither teach nor suggest the invention claimed by the applicants. Therefore, reconsideration of the rejections of claims 1-8, 10 and 15 under 35 U.S.C. §102(b) and of claims 9 and 11 under 35 U.S.C. §103(a) based on Chang et al. is respectfully requested.

The Huang patent also fails to teach or suggest the invention set forth in the amended claims. Huang neither teaches nor suggests the claimed first and second insulation layers,

Applicant(s): Myeong-cheol Kim, et al.
U.S. Serial No.: 09/731,385

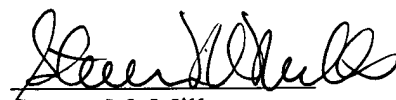
wherein the second insulation layer has a spacer shape and is formed over the first insulation layer, the first and second insulation layers being formed of different insulating materials. The Huang patent also fails to teach or suggest the applicants' claimed first insulation layer filling gaps between adjacent conductive patterns and having a planar top surface extending between adjacent conductive patterns and between a second conductive layer and the conductive patterns. Since neither Chang et al. nor Huang teach or suggest the invention set forth in the amended claims, their combination also fails to provide such teaching or suggestion. Since Chang et al. and Huang, taken alone or in combination, fail to teach or suggest the invention set forth in the amended claims, it is believed that the claims are allowable over Chang et al. and Huang. Accordingly, reconsideration of the rejection of claim 14 under 35 U.S.C. §103(a) based on Chang et al. and Huang is respectfully requested.

Attached hereto is a marked-up version of the changes made to the claims by the current Amendment. The attached pages are captioned "Version with Markings to Show Changes Made."

In view of the amendments to the claims and the foregoing remarks, it is believed that, upon entry of this Amendment, all claims pending in the application will be in condition for allowance. Therefore, it is requested that this Amendment be entered and that the case be allowed and passed to issue. If a telephone conference will expedite prosecution of the application, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

Date: 12/2/02
Mills & Onello, LLP
Eleven Beacon Street, Suite 605
Boston, MA 02108
Telephone: (617) 994-4900
Facsimile: (617) 742-7774


Steven M. Mills
Registration Number 36,610
Attorney for Applicants

Version with Markings to Show Changes Made

In the Claims

1. (Amended) A semiconductor device having a self-aligned contact, the semiconductor device comprising:

a plurality of conductive patterns formed to be adjacent to one another by sequentially stacking and patterning a first conductive layer and a mask layer on a particular underlying layer;

a first insulation layer filling a gap between adjacent conductive [layer] patterns, the first insulation layer being formed of a first insulating material;

a second insulation layer having a spacer shape, the second insulation layer formed at the sides of each conductive [layer] pattern and over the first insulation layer, the second insulation layer being formed of a second insulating material different from the first insulating material; and

a second conductive layer filling a contact hole which is self-aligned with respect to the second insulation layer between adjacent conductive [layer] patterns, the contact hole passing through the first insulation layer, the first insulation layer having a planar top surface extending between adjacent conductive patterns and between the second conductive layer and the conductive patterns.